0499

Predicting post-capillary origin of Pulmonary Hypertension (PH): external validation of the PH Council (PHC) of International Society for Heart and Lung Transplantation (ISHLT) score

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Background: Determination of the origin (pre or post-capillary) of PH is crucial to guide therapy. Right heart catheterization (RHC) is the gold standard to identify PH origin. However this technique is invasive and may cause complications. The PHC of ISHLT proposes a clinical and echocardiographic score to estimate the origin of PH in order to select patients who truly require RHC. The aim of the study was to evaluate the validity of this score in a real life population of patients with PH.

Methods: We studied retrospectively clinical, echocardiographic and hemodynamic characteristics of consecutive patients referred to our center to undergo a RHC between January 2005 and August 2013 and evaluated the performance of the PHC prediction score.

Results: 116 patients with pre capillary PH and 71 with post capillary PH were included.Post capillary PH patients were older(73.2 vs 62.8, p< 0.001), more hypertensive(71.8% vs 44.8%, p<0.001), had more often diabete (29.6% vs 12.0%, p=0.003) and atrial fibrillation (AF, 64.8% vs 3.4%, p<0.001)than pre capillary PH patients.Univariable analysis showed that echocardiographic left heart abnormalities (OR:5.05 95% CI[2.59-9.85], p< 0.001), left heart valvular disease (OR:19.13[5.49-66.68], p< 0.001), comorbidities (hypertension, obesity, coronary artery disease, diabete) (OR:3.15[1.56-6.38], p=0.001) were associated with the presence of post capillary PH. In multivariable analysis, AF is independently associated with post capillary PH (OR: 40.99[9.64-174.25], p < 0.001). ROC curves analysis showed that the PHC score provided an area under the curve (AUC) of 0.78(Se 78% and Sp 66% for a score ≥3) to predict post capillary PH in our population. Adjunction of AF as a new criterion improved the score performance (AUC 0.85, Se 68%, Sp 91%, p=0.004 for a score ≥4).

Conclusion: The score proposed by the PHC of ISHLT to determine non-invasively the origin of PH is fairly accurate but could be enhanced by the adjunction of AF as a new criterion.

January 17th, Saturday 2015

0009

Contribution of right ventricular echocardiographic parameters in evaluation of the prognosis of dilated cardiomyopathy

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Introduction: The evaluation of the prognosis of patients with dilated cardiomyopathy (DCM) is an essential step in their care but the study ultrasound of the right ventricle (RV) is not a part of the practice of the cardiologist.

Purpose: Determine which of the RV echocardiographic parameters those predicting the occurrence of secondary cardiac events (death, hospitalization for decompensated heart failure and ventricular arrhythmias poorly tolerated) in patients with DCM.

Materials and methods: Prospective study in 61 patients with DCM. All patients received a conventional echocardiographic examination with emphasis on studying the RV parameters: fractional shortening surface (FRSRV), the systolic excursion of the tricuspid annulus inTM (TAPS) and systolic pulmonary artery pressure (SPAP), completed by a tissue pulsed Doppler study at the tricuspid annulus (Sa, Ea and Aa). We studied the correlation between echocardiographic parameters of RV and the occurrence of secondary cardiac events.

Results: The average age of patients was 62±9 years with a sex-ratio of 2/1. Forty-eight percent of patients were in NYHA class III. The average fractional ejection of left ventricle was 29±7,2%. DCM was ischemic in 59% of cases. During follow-up (11±5 months), 5 patients died, 22 were hospitalized for decompensated heart failure and 2 patients had a ventricular tachycardia. We have shown that the parameters predictors of mortality are: TAPS < 12mm and FRSRV < 33%. Parameters predictive of hospitalization for decompensated heart failure: SPAP > 42mmHg, RV FRS < 39%, TAPS < 15mm and wave velocities Sa, Ea and Aa or DTI tricuspid annulus < respectivly 10,1cm/s to 6,09cm/s and 12,75cm/s. Those predictive of cardiac events overall: SPAP >42mmHg, a TAPS < 11,5, a FRSRV < 38%, Sa and Aa waves to the DTI tricuspid lower respectively at 10,2cm/s and 14cm/s. In multivariate analysis, only the FRSRV < 38% was a factor directly related to the occurrence of cardiac events overall.

0069

Prognosis of heart failure in the Moroccan woman

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There are differences between heart failure (HF) of women and that of men in terms of epidemiology, pathophysiology, treatment and quality of care.

The aim is to analyze the epidemiological profile of women followed by HEART FAILURE THERAPY UNIT (HFTU) at the cardiology center Ibn Rochd in Casablanca. See how they are optimized therapeutically and demonstrate that the female is an independent prognostic factor.

We report a retrospective study composed of 1500 patients followed in HFTU between January 2007-to May 2013.

On 1500 patients were 525 women and 975 men. The average age of women was 58±4 years versus 62±4 years in men. 38% of women were diabetic and 36% hypertensive.10% of women had at least one coronary lesion confirmed versus 28% for men. Therapeutically only 45% of women were optimized (full dose of beta-blocker-IEC-spirinolactone) versus 78% in men. After 1 year of follow-up there were 4.

The results of our study are similar to those of the few studies and prognosis seems to be better among women, although the mechanism is not well understood.

0082

Multimodality imaging in cardiac amyloidosis: respective contributions of echocardiography, MRI and scintigraphy

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Context: Amyloidosis(A) prognosis is determined by cardiac involvement.The main types of A are immunoglobulin light chain(AL) and transthyretin-related(TTR),which can be mutated(TTRm) or senile(TTRwt). Specific treatments can't be administrated unless A has been typed histologically.Literature suggests echocardiography, ^{99m}Tc DPD scintigraphy and cardiac MRI could help typing A. We described these imaging modalities to assess these potential tools for an uninvasive typing.

Material and methods: We analysed these imaging modalities in patients examined at Cardiomyopathies Competence Center(CCC) of La Timone Hospital in Marseille, with an histologically proven diagnosis of cardiac A(CA).

Results: We included 75patients examined between September 2006 and March 2014 at CCC,with a strongly suspected diagnosis of CA.CA could be histologically confirmed and typed in 45 patients(10 TTRm, 4 TTRwt, 6 TTR undeterminated; 19 AL;6 of other type).In 11 patients, CA was confirmed but

untyped.No statistically significant difference was found between TTR and AL patients for the various imaging modalities.We observed 71% of men, aged 66, NYHA stage 2,4 on average.In all patients,cardiac biomarkers rates were increased. Myocardic mass and interventricular septal thickness were increased (199g/m² and 19mm), restrictive filling pattern was observed in 83% of patients.Despite a relatively preserved left ventricular ejection fraction, Global Longitudinal Strain was impaired at – 11%, with an apical sparing. Scintigraphy showed a frequent myocardic fixation (69%), slightly more intense in TTR patients.Cardiac MRI showed a constant late gadolinium enhancement, more extended in AL patients.

Conclusion: We didn't observe the differences described between CA types, probably because of a lack of statistical power.This encouraged us to develop a protocol for multidisciplinary evaluation of CA, to improve the management of this disease, and to keep on evaluating the diagnostic accuracy of these imaging modalities.

0125

Observational study on Takotsubo cardiomyopathy

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Introduction: Takotsubo cardiomyopathy (TC) is a still rarely diagnosed clinical syndrome, which is characterized by transient cardiac dysfunction with reversible wall motion abnormalities.

Aim: Determine the demographic characteristics, clinical presentation and prognosis of patients with TC.

Methods: Retrospective study of 39 patients admitted for TC in a cardiology center during a period of 3 years.

Results: In the population studied, the mean age was 67.15±12.01 years and women were predominant.The most frequent comorbidities were hypertension (76.9%), dyslipidemia (51.3%), psychiatric illness (23.1%) and diabetes mellitus (12.8%). The emotional stress was the most common triggering event (n=10), however, in 17 patients we were not able to identify any precipitating factor. Cardinal symptoms which led to admission, were acute chest pain (n=28) and dyspnoea (n=15).

The most common ECG findings were ST segment elevation (n=21), inversion of the T wave (n=21) and QTc prolongation (n=22).

All patients had typical wall motion abnormalities in the echocardiography and/or ventriculography. The mean ejection fraction was 35.59±5.54%.

The most common in-hospital complication was acute heart failure (n=16, 41%), whereas 3 patients developed cardiogenic shock. The presence of moderate to severe LVS dysfunction (p=0.048) and higher levels of C reactive protein (p=0.02) and pBNP (p=0.042) were associated with the development of acute heart failure. Rhythm disturbances occurred in 3 patients and there was only one non-cardiovascular death.

At follow-up at 6 months all patients showed recovery of LVS function; there was one recurrence and 3 deaths from non-cardiovascular causes.

Conclusion: According to the literature, our review shows higher prevalence of TC in women and a clinical and electrocardiographic presentation similar to the picture of an acute coronary syndrome. In the acute phase, the TC is not necessarily a benign entity, because we observed a high prevalence of acute heart failure.

0157

Echocardiographic predictors of exercise capacity in Algerian patients with heart failure and systolic dysfunction: role of mitral regurgitation

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Introduction and objectives: Patients with heart failure and similar left ventricular systolic dysfunction have differing exercise capacity. The aim of this study was to identify echocardiographic predictors of exercise capacity in Algerian patients with heart failure and systolic dysfunction.

Methods: We included 150 patients with class II (70%) or III (30%) heart failure with left ventricular ejection fraction below 40%. Six-minute walking test and cardiac color Doppler-echo, including tissue Doppler of mitral and tricuspid rings, were performed. Moderate and severe mitral regurgitation were considered as significant. Two groups were divided according to the median walking distance (290m): Group 1 <290m and Group 2 >290m.

Results: Mitral regurgitation was detected in 112 patients (75%), which was significant in 40 (27%).Group 1 showed more significant mitral regurgitation (35 vs 18%), increased left atrium area (27±1 vs 24±1cm^2), mitral E amplitude (88±65 vs 72±3cm/s) and systolic pulmonary pressure (37±1 vs 32±1 mmHg, all P<.05). By logistic regression analysis, only the presence of significant mitral regurgitation was independently associated with less walked distance (odds ratio: 3.44 95% confidence interval 1.02-11.66, P<.05). By multiple linear regression, the only independent predictor of walked distance was left atrium area (r=0.25, beta coefficient: _6.52±2, P<.01).

Conclusions: In patients with class II-III heart failure and left ventricular systolic dysfunction, the main echocardiographic predictors of exercise capacity are related to the presence of significant mitral regurgitation.

0237

Acute myocarditis – a systematic review of cases over 3 years

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Background: Acute Myocarditis (AM) is an inflammatory disease of the myocardium with a great heterogeneity of clinical presentations.

Methods: Retrospective study including all patients (P) with a discharge diagnosis of AM between 2010 and 2013.

Results: 65 P had a diagnosis of AM (62 idiopathic, 2 acute viral and 1 drug-induced), they were more likely males (n=60) and the majority (n=44) were in the 2nd and 3rd decade of life. Cardiovascular risk factors were present in 58,5%, but only 12,3% had >1 risk factor. Chest pain was the most common clinical presentation (n=64). A prodome of fever/constitutional symptoms occurred in 43,1%. About half of the P(n=34) had pericarditis and 26,2% had pericardial effusion. At admission, 31% had signs of heart failure. Admission electrocardiogram showed repolarization abnormalities in 75,4%, with persistent ST-T segment elevation being the most common (n=33). Pathological Q waves were present in 4,6%. At admission, 92,3% had increased inflammatory biomarkers. Virus serology was collected in 27,7%, and only in 2P the results were suggestive of acute infection. The echocardiogram showed left ventricular (LV) systolic dysfunction (LVSD) in 18,4% and LV dilatation in 3,1%. About half of the P (n=31) had segmental wall motion abnormalities, more frequently observed in the inferior wall (n=13). Cardiac magnetic resonance (CMR) showed LVSD in 10,5%. Comparing to previously echocardiographic assessment (mean 5,6±6,5 days), CMR showed deterioration of LV systolic function in 3 P and recovery in 8 P. Late gadolinium enhancement (LGE) was localized to subepicardial regions in 63,2%, to mesocardic regions in 8,8% and in 21,1% was localized in both regions. LGE was most frequently found in the lateral wall (n=44). Regional edema was observed in 5,3%. Endomyocardial biopsy was not performed in any P. During hospitalization, there was no mortality.

Conclusion: AM appears as young adult disease frequently presenting with chest pain and often associated with pericarditis and viral prodrome. About one fifth of the P had LVSD, but in-hospital prognosis was relatively benign.